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ROYAL BOTANIC GARDENS, KEW.

BULLETIN

OF

MISCELLANEOUS INFORMATION.

No. 8.] [1912.

XLV.—FUNGI EXOTICI: XV.

(With Plate.)

G. Massee.

Of the five new Fungi described, three have been received from the Gold Coast, West Africa, and two from Malaya. All are parasitic, but *Isaria Pattersonii* may be considered a beneficial parasite, since it attacks injurious scale insects. The other species are injurious parasites on economic plants.

Basidiomycetes.

Pleurotus Colae, *Massee* (figs. 11–14).

Pileus tenuissimus, primo resupinatus, dein lateraliter adnatus, sessilis, tenuiter membranaceus, candidus, puberulus, 3–4 mm. diametro. *Lamellae* paucae (7–12), distantes, tenues, acie integrae, concolores, apicem versus venoso-connexae. *Sporae* subglobosae, hyalinae, 7–8 × 5–6 μ. *Basidia* clavulata, hyalina, 28–34 × 6–7 μ.

Gold Coast. Aburi, on young fruits of *Cola acuminata*, Schott. & Endl., *W. H. Patterson*.

Gregarious on the pericarp. Quite a minute fungus, most nearly allied to *Pleurotus chioneus*, Pers.

Ascomycetes.

Dothidella Pterocarpi, *Massee* (figs. 5, 6, 9, 10).

Maculae hic inde sparsae, orbiculares vel difformes, determinatae, arescenti-fuscae, zona obscura cinctae. *Stromata* in centro macularum laxe aggregata, matrici innata, tumidula, atra, nitentia, subcarbonacea. *Asci* subcylindracei, apice incrassato-rotundati, basi modice attenuati, pedicellati, octospori. *Sporae* oblique monostichae, ellipsoideae, hyalinae, 1-septatae, 15–18 × 7–8 μ.

Malaya. Kuala Lumpur, on living leaves of the Angsana tree —*Pterocarpus indicus*, Willd., *C. K. Bancroft*.

This fungus closely resembles typical species of *Phyllachora* in its superficial characters, but differs in having hyaline, 1-septate spores. The stromata are blackish-brown and polished, resembling minute drops of pitch sprinkled on brownish patches on the leaves. The stromata are situated on the upper surface of the leaf.

(26431—6a.) Wt. 189—808. 1125. 10/12. D & S.

The Angsana tree, the host-plant, is grown as an avenue tree in several towns in the Malay Peninsula. As allied fungi cause early defoliation, the extension of the parasite should be checked, which could be accomplished by collecting and burning the fallen, diseased leaves. If spraying be practicable, half strength Bordeaux mixture should be applied when the foliage is young, independent of the appearance of the disease, in those districts where it has previously existed.

DEUTEROMYCETES.

Diplodia Arecae, *Massee* (figs. 1–4).

Stromata tuberculoso-subhemisphaerica, 3–4 mm. diametro, erumpentia ac subsuperficialia, aterrima ; perithecia densiuscule gregaria, atra, irregulariter dehiscentia, contextu parenchymatico pellucido fuligineo. *Sporulae* ellipsoideae, utrinque obtusatae, rectae, 1-septatae, hyalinae, dein atrofuscae, 28–35 × 15–17 μ.

GOLD COAST. Aburi ; parasitic on the seed of *Areca Catechu*, L., *A. E. Adams.*

The nuts, on arrival at Kew, appeared to be perfectly sound and free from disease, and were placed in a glass jar for exhibition purposes. After a period of some weeks, black pustules bursting through the testa were observed on some of the nuts, and in course of time, almost every nut became more or less thickly covered with prominent, black warts. In healthy seeds the endosperm is white, but in those that are infected it is converted into a blackish spongy mass. The endosperm is thoroughly permeated by the dark-coloured mycelium before the fruit of the fungus bursts through the testa. The appearance of the seed suggests that infection takes place at a very early stage of its development, probably through the stigma.

Technically *D. Arecae* is very close to *D. cacaoicola*, P. Henn., as originally described, but at the present time so many apparently different forms have been aggregated under the name *D. cacaoicola*, that *D. Arecae* may possibly be included amongst such, and if so, it is very important that the fungus on *Areca* should be diligently sought out and destroyed by burning, otherwise there is the probability of its passing on to other host-plants of economic importance, as the species of *Diplodia* are not so restricted in their choice of a host as are some parasitic species of fungi.

Isaria Pattersonii, *Massee* (figs. 15–17).

Stroma effusum, crustaceo-tomentellum, matricem totam externe atque interne ambiens, cinereum, ubique ramulos erectos multifidos emittens ; ramuli ex hyphis filiformibus densissime constipatis apice plus vel minus liberis efformati. *Conidia* in hypharum apicibus acrogena, numerosissima, globosa, hyalina, 2 μ diametro.

GOLD COAST. Parasitic on a "scale insect"—*Nuzura viridula*, L., *W. H. Patterson.*

As a rule the insect is completely covered with a downy or minutely velvety nap, from which spring numerous, more or less erect, variously divided branches, bearing the very minute conidia at their fimbriate tips. The interior of the scale is completely filled with a white stroma formed of densely compacted hyphae. From analogy, this fungus must be considered as the conidial condition of a species of *Cordyceps.*

The scale insect is a giant of its kind, measuring about 1 cm. in length by 17 mm. in breadth.

Helminthosporium obovatum, *Massee*.

Maculae sparsae, orbiculares vel difformes, determinatae, fuscae. *Acervuli* hypophylli, in maculis laxe sparsi, olivacei, ex hyphis gracilibus rectis vel curvulis parce septatis compositi, 35–45 × 4–6 μ. *Conidia* obovata, utrinque obtusata, 1–3-septata, olivacea, episporio laevi donata.

Malaya. Kuala Lumpur, on living leaves of *Pterocarpus indicus*, Willd., *C. K. Bancroft*.

This fungus occurred on brown spots on the under surface of the leaf on which *Dothidella Pterocarpi* occurred on the upper surface, and may possibly prove to be a conidial condition of that species.

Explanation of Figures.

Fig. 1. *Diplodia Arecae*, fungus on Areca nut ; nat. size.
„ 2. Section of Areca nut, permeated throughout by the dark mycelium of the fungus ; nat. size.
„ 3. Section of a sound Areca nut ; nat. size.
„ 4. Spores of the fungus, showing various stages of development ; mag.
„ 5. *Dothidella Pterocarpi*, on leaf of *Pterocarpus indicus* ; nat. size.
„ 6. Portion of same ; slightly mag.
„ 8. *Helminthosporium obovatum*, on leaves of *Pterocarpus* ; mag.
„ 9. Section of leaf of *Pterocarpus*, showing *Dothidella* on the upper and *Helminthosporium* on the under surface.
„ 10. Ascus of *Dothidella* ; mag.
„ 11. *Pleurotus Colae*, on the Cola fruit ; nat. size.
„ 12. *P. Colae* ; mag.
„ 13. Basidia and spores of *P. Colae* ; mag.
„ 14. Section of *P. Colae* ; mag.
„ 15. *Isaria Pattersonii*, parasitic on *Nuzura viridula* ; mag.
„ 16. Portion of *I. Pattersonii* ; mag.
„ 17. Spores of *I. Pattersonii* ; mag.

XLVI.—DIAGNOSES AFRICANAE: LI.

1411. **Macphersonia acutifoliola**, *Hemsl.* [Sapindaceae-Sapindeae] ; inter species mihi cognitas gracilitate et foliolis apice aculeatis facile recognoscenda ; a *M. gracili*, O. Hoffm., racemis folia vix excedentibus recedit.

Frutex novellis pilosulis, ramis florigeris rectis rigidis. *Folia*, ut videtur, cum floribus in apicibus ramorum conferta, pari-bipinnata, rhachibus petiolisque pilosulis gracillimis ; pinnae 4–5-jugae, oppositae vel subalternae, approximatae, inaequales, inferiores breviores, longiores, usque ad 10 cm. longae ; foliola 5–20-juga, conferta, subsessilia, tenuia, primum ciliolata, ceterum glabra, supra nitida, oblique oblongo-lanceolata, 0·5–1·5 cm. longa, aculeato-apiculata, venis tenuissimis crebris inconspicuis. *Flores* polygami, masculi tantum visi, 2–3 mm. diametro, dense simpliciterque racemosi, pedicellis 2–3 mm. longis ; racemi axillares, 5–10 cm.

longi, bracteis minimis. *Sepala* 5 orbicularia, concava, 1·5–2 mm diametro, ciliata. *Petala* 5, squamiformia, circiter 1 mm. diametro, fimbriata. *Discus* annularis, glaber, coloratus. *Stamina* 7 vel 8, centralia, exserta, quam sepala duplo longiora ; filamenta filiformia, glabra ; antherae purpureae. *Ovarii* rudimentum nullum.

North Madagascar. Without exact locality, *Rev. R. Barron*, 6226.

1412. **Macphersonia myriantha**, *Hemsl.* [Sapindaceae-Sapindeae] ; a speciebus ceteris differt foliorum amplitudine pinnis alternis et floribus numerosissimis paniculatis.

Arbor vel frutex praeter flores fere omnino glaber, ramis florigeris crassis primum obscure puberulis simul crebre lenticellatis ad nodos incrassatis. *Folia* alterna, bipinnata, ampla, usque ad 30 cm. longa, petiolo communi valido canaliculato ; pinnae alternae 7–11, saepius 10–15 cm. longae ; foliola usque ad 10-juga, brevissime petiolulata, subopposita vel superiora saepe distincte alterna, conferta sed non imbricata, leviter oblique oblongo-lanceolata, 2–3·5 cm. longa, obtusa, supra nitida, venis crebris inconspicuis. *Flores* perparvi, densissime cymosi, distincte pedicellati, pubescentes ; cymae racemosae vel racemoso-paniculatae ; paniculae usque ad 25 cm. longae et 15 cm. latae, sed saepe minores. *Sepala* 5, orbicularia, concava, 1–1·5 mm. lata. *Petala* 5, minutissima, fimbriata. *Stamina* bene evoluta non visa. *Ovarium* hirsutum. *Fructus* ignotus.

Madagascar. Without locality, *Perrillé*.

1413. **Landolphia (Jasminochyla) Rogersii**, *Stapf* [Apocynaceae-Plumerioideae] ; affinis *L. Buchananii*, Stapf, sed partibus junioribus parce pilosulis, foliis lanceolatis, pedicellis ad 5 mm. longis, corollae tubo quam lobi longiore vel iis vix aequilongo, staminibus infra medium insertis distincta.

Frutex scandens ; rami juniores graciles, pilis brevibus patulis parce conspersi, cortice castaneo, lenticellis crebris pallidis parvis. *Folia* lanceolata, subacuminata, acumine obtuso, basi subrotundata, 5–8 cm. longa, 1·5–2·5 cm. lata, chartacea, supra fere opaca, prima juventate dorso in costa albo-pubescentia, mox glabrescentia, costa supra canaliculata infra prominente, nervis lateralibus utrinque 12–15 tenuibus rectis oblique patulis sub margine arcuatim connectis, venis infra prominulis supra subimmersis tenuissimis anastomosantibus ; petiolus 3–4 mm. longus, pilosulus. *Corymbi* parvuli, pauciflori, cum pedunculo 1 cm. longo parce pilosuli ; bracteae oblongo-lanceolatae vel superiores ovatae, ad 2 mm. longae ; pedicelli ad 5 mm. longi. *Calyx* circiter 2 mm. longus, glaber vel parcissime et minute pilosulus, tubo brevi sed distincto, lobis ovatis obtusiusculis vel obtusis ciliatis. *Corolla* alba, glaberrima ; tubus subcylindricus, ad medium dilatatus, 7–8 mm. longus ; lobi lineari-oblongi, obtusi, ad 7 mm. longi. *Stamina* infra medium inserta. *Ovarium* ovoideum, glabrum ; stylus cum stigmate subcylindrico vix 2 mm. longus. *Fructus* ignotus.

Tropical Africa. Belgian Congo : Elisabethville ; Lat. 11° 37′ S., Long. 27° 24′ E., *Rev. F. A. Rogers*.

1414. **Lepidagathis Rogersii**, *Turrill* [Acanthaceae-Acanthoideae] ; *L. anobryae*, Nees., affinis, sed foliis brevioribus facile distinguenda.

Caules erecti, teretes, glabri. *Folia* sessilia, oblonga, apice acuta, circiter 3 cm. longa, usque ad 2·5 mm. lata, trinervia. *Inflorescentiae* congestae, ex ima basi caulium nascentes; bracteae ovato-lanceolatae, apice acuminatae, 1·5 cm. longae, 6 mm. latae, steriles extra plusminusve glabrae, fertiles pubescentes, longe ciliatae; bracteolae lanceolatae, acuminatae, 1·5 cm. longae, 3 mm. latae, pubescentes, longe ciliatae. *Sepala* 5, ad basin libera, acuminata, pubescentia, ciliata; posticum lanceolatum, 1·8 cm. longum, 4 mm. latum; antica lanceolata, 1·5 cm. longa, 2·5 mm. lata; lateralia linearia, 1·4 cm. longa, 1·5 mm. lata. *Corollae* tubus cylindricus, 8 mm. longus, 1·5 mm. diametro, intra ad faucem sub staminum insertione annulo pilorum ornatus; limbus bilabiatus, extra pubescens; labium anticum trilobatum, 7 mm. longum, 1 cm. latum; labium posticum 6 mm. longum, 5 mm. latum, emarginatum. *Stamina* 4 ad corollae faucem inserta; filamenta 4 mm. longa, basi ciliata; antherae omnes biloculares; pollinis granula ellipsoidea, 40 μ longa, 30 μ lata. *Discus* cupuliformis, 1 mm. altus, ovarium cingens. *Ovarium* ovoideum, 2·5 mm. altum, 1·5 mm. diametro, glabrum, loculis uniovulatis; stylus 9 mm. longus, inferne longe pilosus.

Tropical Africa. Belgian Congo: Sakania, *Rev. F. A. Rogers*, 10,032.

1415. **Lepidagathis acicularis**, *Turrill* [Acanthaceae-Acanthoideae]; a speciebus omnibus africanis adhuc descriptis foliis acicularibus differt.

Caules tenues, teretes, glabri. *Folia* acicularia, apice acuta, sessilia, circiter 5 mm. longa, 0·5 mm. lata, subcoriacea, glabra. *Inflorescentiae* congestae, axillares vel basilares; bracteae lanceolatae, acuminatae, 1·7 cm. longae, 2·5 mm. latae, dorso fere glabrae, longe ciliatae; bracteolae bracteis similes. *Sepala* 5, ad basin libera, acuminata, dorso pubescentia, longe ciliata; posticum lanceolatum 1·7 cm. longum, 3 mm. latum; antica lanceolata, 1·7 cm. longa, 2·5 mm. lata; lateralia linearia, 1·5 cm. longa, 1 mm. lata. *Corollae* tubus inferne cylindricus, superne ampliatus, 1 cm. longus, basi 2·5 mm. diametro, apice 5 mm. diametro, intus ad faucem sub staminum insertione annulo pilorum ornatus, extra glaber; limbus bilabiatus, extra minute pubescens; labium anticum trilobatum, 6 mm. longum, 9 mm. latum, intra pilosum; labium posticum emarginatum, 5 mm. longum, 4 mm. latum. *Stamina* 4, ad faucem inserta; filamenta 4 mm. longa, glabra; antherae omnes biloculares; pollinis granula ellipsoidea, 40 μ longa, 25 μ diametro. *Discus* cupuliformis, 0·5 mm. altus, ovarium cingens. *Ovarium* late ovoideum, 1·5 mm. altum, 1·25 mm. diametro, loculis uniovulatis; stylus 1 cm. longus, minute glandulosus.

Tropical Africa. Northern Nigeria: Lokoja; on top of Mt. Patti, *Dalziel*, 139.

1416. **Thunbergia abyssinica**, *Turrill* [Acanthaceae-Acanthoideae]; species *T. sericeae*, Burkill, valde affinis, foliis oblongis, corollis majoribus, foliis bracteolisque rigide pubescentibus differt.

Caules erecti, teretes, dense pubescentes. *Folia* oblonga vel oblongo-elliptica, apice obtusa, basi rotundata, usque ad 3 cm. longa, 1 cm. lata, subcoriacea, pagina utraque rigide adpresse pubescentia, marginibus integra, trinervia, petiolis usque ad 2 mm. longis

suffulta. *Flores* axillares, solitarii, pedicellis usque ad 5 mm. longis suffulti ; bracteolae ovatae, apice obtusae, 1·5 cm. longae, 1 cm. latae, extra rigide pubescentes, intra glabrae. *Calyx* multifidus, 2·5 mm. altus, extra minute glandulosus. *Corollae* tubus cylindricus, superne ampliatus, inferne constrictus, 1·6 cm. longus, basi 3 mm. diametro, apice 6 mm. diametro, extra glaber, intus pilosus ; limbus aequaliter 5-lobatus, lobis 1 cm. longis 9 mm. latis, apice truncato-retusis, glaber. *Stamina* 4, filamentis minute glandulosis, antheris inferne barbatis ; duo antica filamentis 6 mm. longis, antherarum loculo utroque calcarato ; duo postica filamentis 4 mm. longis, antherarum loculis superioribus solum calcaratis ; pollinis granula sphaeroidea, 75 μ diametro. *Discus* 0·5 mm. altus, integer, ovarium cingens. *Ovarium* sub-sphaeroideum, 2 mm. altum, 2 mm. diametro, glabrum, 4-ovulatum ; stylus 9 mm. longus, glaber ; stigma bilobatum, lobo postico 2 mm. longo, lobo antico 1 mm. longo. *Capsula* 1·7 cm. longa, rostro 8 mm. longo, pubescens. *Semina* 4, complanata, laevia.

Tropical Africa. Abyssinia : between Dalbo and Kambata, April 1910, *N. C. Cockburn.*

1417. **Thunbergia lancifolia**, *Anders.*, in Journ. Linn. Soc. vol. vii. (1864), p. 19, var. **rhodesica**, *Turrill*, var. nov., a planta typica foliis ellipticis usque ad 3·5 cm. longis 1·7 cm. latis, caulibus foliisque moliter pubescentibus, bracteolis dense et minute glandulosis distinguenda.

Tropical Africa. Rhodesia ; between Broken Hill zincmine, and Bwana M'cuba copper mine, Oct. 1906, *C. E. F. Allen*, 298320 ; Broken Hill, Sept. 1909, *Rev. F. A. Rogers*, 8540.

1418. **Thunbergia Rogersii**, *Turrill* [Acanthaceae-Thunbergioideae] ; *T. angolensi*, S. Moore, affinis, caulibus patentim pubescentibus, foliis bracteolisque dense pubescentibus non tomentosis, bracteolis minoribus differt.

Caules erecti, teretes, patentim pubescentes. *Folia* elliptica vel ovato-elliptica, apice acuta vel leviter acuminata, basi rotundata, usque ad 2·7 cm. longa, 1·4 cm. lata, subcoriacea, pagina utraque adpresse pubescentia, marginibus integra, obscure penninervia, sessilia vel brevissime petiolata. *Flores* axillares, pedicellis usque ad 1·5 cm. longis patentim pubescentibus suffulti ; bracteolae ovatae vel elliptico-ovatae, usque ad 2·5 cm. longae, 1·2 cm. latae, extra pubescentes, intus glabrae. *Calyx* irregulariter lobatus, 2 mm. altus. *Corollae* tubus rectus, superne oblique ampliatus, extra minute glandulosus, intra inferne minute et dense glandulosus, superne glaber ; limbus glaber, 5-lobatus, lobis rotundatis posticis 8 mm. longis 1 cm. latis antico lateralibusque quam postici minoribus. *Stamina* 4, antheris apice distincte mucronatis inferne barbatis basi calcaribus vel minutissimis vel usque ad 1 mm. longis et curvatis instructis, filamentis inter se aequalibus, 1 cm. longis, glabris ; pollinis granula sphaeroidea, 70 μ diametro. *Discus* crassus, 1·5 mm. altus. *Ovarium* 2·5 mm. altum, 2·5 mm. diametro, glabrum ; stylus (cum stigmate) 2 cm. longus, superne glandulosus ; stigma infundibuliforme, barbatum, glandulosum.

Tropical Africa. Belgian Congo : Elisabethville ; Lat. 11° 37′ S., Long. 27° 24′ E., 1476 m., *Rev. F. A. Rogers*, 10,150, 10,185.

1419. **Dalechampia Kirkii**, *Prain* [Euphorbiaceae-Crotoneae]; species *D. volubili*, E. Mey., quam maxime affinis foliis minoribus saepe 5-lobis stigmatibus dilatatis facillima distinguenda.

Suffrutex caulibus gracilibus volubilibus metralibus parce pubescentibus. *Folia* breve petiolata, firma, profunde 3-partita lobis lateralibus iterum inaequaliter 2-fidis raro integris; lobi lanceolati, acuti, margine argute serrati; lamina basi cordata, 2·5–4 cm. longa, 4–5 cm. lata, utrinque nitidula subtus prominenter reticulata, secus nervos minute pubescens; petiolus parce pubescens 8 mm. longus; stipulae lanceolatae, patentes, glabrae, 3 mm. longae. *Flores* capitati; capitula pedunculo parce pubescente 2·5–5 cm. longo suffulta; bracteae involucrantes lutescentes demum virides, 1·8 cm. longae, 2·5 cm. latae, basi alte cordatae, 3-fidae, lobi ovati, acuti, serrati; bracteae maris integrae; calyx maris extra minute puberulus, lobi ovati, acuti; calycis feminei segmenta lineari-lanceolata, utrinsecus dense pinnatim lacinulata; lacinulae graciles, glandulosae, scabridae; ovarium puberulum; stylus columnaris, cylindricus, apice ipso dilatatus. *Capsula* 3-cocca, pubescens, 8 mm. latus; cocci subglobosi. *Semina* globosa.

South Africa. Transvaal: Koomati Poort, *Kirk*, 60.

1420. **Drimia oligosperma**, *C. H. Wright* [Liliaceae-Scilleae]; *D. macranthae*, Baker, affinis, ovarii loculis biovulatis differt.

Bulbus ellipticus, 15 cm. longus, 6 cm. diametro, vestigiis fibrosis foliorum vestitus. *Folia* 12–14 rosulatim disposita, 45 cm. longa, 2 cm. lata, lineari-acuminata, glabra, dense tenuiterque venosa, linea media pallida 2 cm. lata instructa. *Pedunculus* 60 cm. longus, 1 cm. diametro, cylindricus, glaber; panicula 105 cm. alta; ramus infimus patens, 70 cm. longus; bracteae 12 cm. longae, e basi triangulari 8 mm. lata subulatae; bracteolae ovatae, 4 mm. longae; pedicelli subpatentes, 14 mm. longi, tenues, rigidi. *Perianthii* segmenta 2 cm. longa, 5 mm. lata, oblanceolata, obtusa, patentia, alba, nerviis 3 viridibus instructa. *Stamina* perianthii segmentis aequilonga; antherae 4 mm. longae, rubro-brunnae. *Ovarium* trilobatum, 6 mm. longum, loculis biovulatis; stylus brevis.

Native country unknown, probably South Africa; described from a plant cultivated in the Royal Botanic Gardens, Glasnevin.

Sir Frederick Moore writes "The inflorescences are much branched, over 6 ft. high. The flowers commence to open about 4 or 5 o'clock in the afternoon, and in the evening the inflorescence is covered with beautiful white stars." This plant was received at Glasnevin several years ago as "*Leucojum roseum*," with which it is totally unconnected.

XLVII.—ADINOBOTRYS OR WHITFORDIODENDRON.

S. T. Dunn.

When publishing the Indo-malayan genus *Adinobotrys* (*K.B.*, 1911, p. 193), the writer unfortunately failed to appreciate that the Philippine genus *Whitfordia* or *Whitfordiodendron*, as it was afterwards called (*Whitfordia* being pre-occupied by a fungus), published

by Mr. Elmer in his *Leaflets of Philippine Botany*, ii. 689 and 743 (1910), was a previous discovery of the same genus. Specimens were not available, and Mr. Elmer's suggestion of *Psoralea* as an ally and his description of the vexillary stamen as sterile seemed to indicate that his genus was systematically, as indeed his locality was geographically, far removed from *Adinobotrys*. Now that specimens have been received, however, from the Herbarium of the Philippine Bureau of Science through the kindness of Mr. Merrill, and have been compared with *Adinobotrys*, they are at once seen to be congeneric. The writer fails to see even the remotest special connection with *Psoralea* and finds the vexillary stamen to be constantly fertile. Its anther ripens and dehisces, like those of the other stamens, before the opening of the flower, but frequently becomes detached from its filament as the growing pistil pushes its way through the mass of slightly cohering anthers. With these explanations and apologies to Mr. Elmer for the oversight, the writer has now the pleasure of adding five more species to the interesting genus discovered by that energetic collector and botanist.

Those botanists who adhere strictly to the Vienna code of rules for nomenclature will prefer to retain the generic name *Adinobotrys*, as *Whitfordia* and *Whitfordiodendron* were not accompanied by a Latin description (in accordance with Article 36), and will refer to the Philippine species as *Adinobotrys scandens*, while those who admit vernacular diagnoses as conferring valid publication will call the genus *Whitfordiodendron* and the species *W. scandens*, Elmer, MS. (this combination has not been published before), *W. erianthum*, *W. filipes*, *W. Nieuwenhuisii*, *W. myrianthum*, *W. atropurpureum*. The following is the Latin diagnosis of Mr. Elmer's species.

Adinobotrys scandens, *Dunn* (comb. nov.); affinis *A. myrianthæ*, Dunn, sed floribus bis longioribus, et ovario uni-ovulato differt.

Frutex scandens. *Folia* 2-juga, 20–30 cm. longa; foliola superiora lateralia oblonga, acuta vel acuminata, basi cuneata, 10 cm. longa, coriacea, glabra, utrinque reticulata, venis 4–5-paribus, petiolulis 7–8 mm. longis, stipellis nullis. *Panicula* pseudo-terminalis, 30–50 cm. longa, ramis ad 10 cm. longis luteo-viridibus (*Elmer*) pubescentibus. *Flores* secus ramos dense subspicati, bracteis oblatis caducis. *Calyx* campanulatus, 5 mm. longus, lobis 4 tubo aequilongis, superiore bidentato, lateralibus acutis, inferiore obtuso, sicut pedicelli 1–2 mm. longi vexillum et carina breviter sericeo-tomentosus, bracteolis supra basin tubi affixis caducis. *Vexillum* intense rubrum (*Elmer*), basi rotundatum, exauriculatum, 1·7–1·8 cm. longum. *Alae* oblongae, basi antice semisagittatae. *Carina* similis. *Stamen* vexillare a caeteris liberum, saepe vexilli ungue plicato amplexum. *Ovarium* utrinque angustatum, medio uni-ovulatum, sericeum. *Legumen* maturum ignotum.

Philippine Islands. Is. of Sibuyan: Capiz Province; Magallanes (Mt. Giting-giting), *Elmer*, 12,259.

XLVIII.—THE GENUS CORCHOROPSIS.

H. Takeda.

This small genus, established on a single Japanese species, has been referred to *Tiliaceae* since the time of its publication.* When describing *Paradombeya*, a new genus of *Sterculiaceae*, Stapf, however, pointed out† that his genus had a close relationship to *Corchoropsis* and *Pentapetes*. It has therefore been suggested to me that it would be interesting to determine to what Natural Order the genus *Corchoropsis* should be referred.

The original description and figures given by Siebold and Zuccarini are excellent on the whole except for the stamens. The stamens are, normally, 15 in number, very slightly united at the base, arranged in groups of threes, which alternate with the five long narrowly spathulate staminodes placed opposite to the sepals. The middle one of each group of three stamens is the longest, whereas in *Paradombeya* it is the shortest. In anomalous cases, some of the stamens are lacking, so that there may be less than 15 of them. The petal is inequilateral, as in *Pentapetes* and *Paradombeya*. The design of the flower of *Corchoropsis* is therefore practically the same as in these two genera with this difference that the ovary is three-chambered and many-ovuled.

In external appearance *Corchoropsis* is very similar to *Corchorus*, as was noticed by Siebold and Zuccarini. The structure of the flower is, however, totally different from that tiliaceous genus in having a definite number of stamens and staminodes as well as in the nature of the petals, nor does it possess a close affinity to any other genus of *Tiliaceae*. I am consequently led to the conclusion that the genus in question is to be transferred to *Sterculiaceae*, tribe *Dombeyeae*.

The genus is only known from the Far East, and includes, at present, two species. The synonymy and distribution are as follows :—

Corchoropsis tomentosa, *Makino* in Tôkyô Bot. Mag. xvii. (1903), p. 11.—*Corchorus tomentosus*, Thunb. Fl. Japon. p. 228, excl. syn. *Corchoropsis crenata*, Sieb. et Zucc. in Abh. Akad. Münch. iii., p. 738, tab. iv., 1 ; Miq. Prol. Fl. Japon. p. 206 ; Fr. et Sav. Enum. Pl. Japon. i., p. 66 ; Forbes et Hemsl. Index Fl. Sinensis, i., p. 94.

Japan, China, and Manchuria.

Corchoropsis psilocarpa, *Harms et Lösen.* in Engl. Bot. Jahrb. xxxiv., Beibl. 75, p. 51 (1904) ; Komar. Fl. Mansh. iii., p. 24 ; Nakai Fl. Koreana, i. p. 105, tab. ix.

Corea, China, and Manchuria.

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* Sieb. et Zucc. in Abh. Akad. Münch. iii, p. 737, tab. iv, 1. (1843).
† Stapf in Hook. Icon. Pl. ser. 4, viii, 1905, sub tab. 2743.

XLIX.—A CONTRIBUTION TO THE FLORA OF HAINAN (CHINA).

S. T. Dunn.

The flora of Hainan is as yet very imperfectly known and the few botanical collections that have been made there were almost entirely from the low lying regions in the north of the Island. Hance and Sampson* paid a short visit to Kiung-chou-fu in 1866 but collected only near that city, which is a few miles from the northern coast. In 1868 Sir Rutherford Alcock, then British Minister at Pekin, sent Swinhoe to investigate the commercial possibilities of the island and that energetic naturalist in the course of his enquiries penetrated as far into the interior as Ling-mun where the Li tribes come down from their southern fastnesses to barter with the Chinese of the northern plains. Fourteen years later B. C. Henry spent two months in exploring the interior and though he collected few plants we are fortunate in possessing an interesting description and map of his travels in his "Ling-nam" (Chap. xvii.–xxvii). His indefatigable namesake Augustine Henry, now Reader in Forestry at Cambridge University, collected a few hundred species around Hoihou the treaty port at the northern point of the coast, during his few months' residence there in 1889. Chinese collectors were also sent from Hongkong by Ford while Superintendent of the Botanical and Forestry Department in that Colony and the writer, his successor there, made many efforts to obtain collections from the interior and especially from the sacred Ng-shi-shan or five-finger mountain which lies rather to the south of the centre.

The island of Hainan is about two-thirds the size of Ireland and the central portion is covered with dense forest and is intensely hot and humid during most of the year. The forest is moreover infested with land leeches of a specially attentive kind. These obstacles would not however deter the Chinese collectors who have been sent. They have been prevented from reaching the central districts by their fear of the wild Li people who resent any intrusion by the Chinese into their country. B. C. Henry succeeded in reaching the neighbourhood of Ng-shi-shan but was unable to ascend it. In 1908 the Japanese collector Katsumata was engaged by the writer with the special object of collecting plants on Ng-shi-shan for the Hongkong Herbarium and the plants described or mentioned below are chiefly from his collection.

He described the mountain as densely clothed with forest nearly to the summit, where it rises into (probably five) bare and rugged peaks. The few other travellers who have been fortunate enough to see it on one of the rare occasions when it was not partly hidden by clouds corroborate this description.

Hedyotis paridifolia, *Dunn*, sp. nov. *Herba* praeter corollam glabra, 20–30 cm. alta. *Caulis* superne angulata. *Foliorum* duo paria sub floribus arcta, reliqua distantia, omnia subsessilia, elliptica, apice acuta, basi cuneata, 7–12 cm. longa, papyracea,

* Bretschneider, History of European Botanical Discoveries in China, 635.

venis utrinque 7, paucis basin versus approximatis ascendentibus arcuatis areolarum series paucas includentibus ; stipulae parvae, late triangulares. *Flores* glomerulum terminalem sessilem 2–2·5 cm. latum foliis 4 floralibus suffultum formantes, albi ?, 8 mm. longi, sessiles, bracteis parvis ovatis suffulti. *Calycis* lobi 4, lineares, erecti, 2 mm. longi, tubo paullo longiores. *Corolla* infundibuliformis, lobis 4 linearibus tubo angusto bis brevioribus patulis, tubo intus fauce tomentello. *Stamina* 4, infra faucem inserta, corollam paullo excedentia. *Ovarium* biloculare, multi-ovulatum ; stylus filiformis, apice breviter 2-ramosus. *Fructus* ovoideus, crustaceus ; semina minuta, numerosa, angulata.

Ng-shi-shan, June, 1909, collected by *Katsumata*, *Hongkong Herb.*, 6649.

Comparable with *H. uncinella*, Hook. et Arn., but distinct in the cuneate base of the leaves and in the suppression of the upper internode whereby a whorl-like arrangement of four large leaves subtends the inflorescence as in *Paris*.

Hedyotis cryptantha, *Dunn*, sp. nov. *Herba* perennis, procumbens, 30–40 cm. alta, praeter flores glabra ; caulis inter folia angulata, robusta. *Folia* primo caerulescentia, anthesi ex nodis paucis summis magna, erecta, approximata, flores obtegentia, ceteris ob bases tantum persistentes internodia brevia inferiora notantibus, elliptica, utrinque angustata, acuminata, basi dilatata, 20–30 cm. longa, papyracea, venis marginem approximantibus 6–7-paribus ; stipulae magnae, margines foliorum basi dilatatas jungentes, in lobum 1–2 cm. longum anguste triangularem dentatum expansae. *Flores* in glomerulos 2.5 cm. longos axillares collecti, albi, 2 cm. longi, subsessiles ; bracteolae lineari-lanceolatae. *Calyx* 1·5 cm. longus, lobis 4 linearibus tubo 6–8-plo longioribus. *Corolla* tubulosa, intus fauce tomentella, 1·7-1·8 cm. longa, lobis angustis tubo 6-plo brevioribus patentibus. *Antherae* in tubo infra tomentum inserta et eo sessiles. *Ovarium* ovale, 2 mm. longum, multi-ovulatum : stylus tubo corollae aequilongus, bifidus. *Capsula* ovulis, membranacea, indehiscens ; semina minuta, angulata.

On level marshy ground near Hong-ta village, June 27th, 1893, *Hongkong Herb.*, 410.

Though differing in no way generically from *Hedyotis* this curious species is rather divergent in habit from any of that genus previously known from the region, having its clusters of white flowers almost hidden among the large leaves.

Ixora pavettaefolia, Craib.

Already known from Yunnan, Cochin China, and Siam.

Lasianthus calycinus, *Dunn* sp. nov. *Arbor* parva vel frutex ; caulis primo adpresse sericeus, mox glaber. *Folia* oblongo-elliptica, breviter acuminata, basi rotundata, 13–15 cm. longa, chartacea, praeter venis tenuiter adpresse pubescentibus glabra, venis utrinque 8 infra prominentibus, trabeculis numerosis parallelis conspicuis ; petioli 0·8–1 cm. longi ; stipulae triangulares, acuminatae. *Flores* 4–6-ni, subsessiles, glomerulos axillares ebracteatos formantes, 7 mm. longi. *Calyx* 6 mm. longus, extus tenuiter pubescens, lobis 4 linearibus tubo breviter apice libero bis longioribus. *Corolla* tubulosa, extus sericea, intus infra faucem tomentosa, calyci aequilonga,

lobis 4 ovatis patulis tubo 4-plo longioribus. *Stamina* in tomento faucis inserta ex tubo paullo exserta. *Ovarium* ovatum ; stylus tubo corollae equilongus, bifidus.

Ng-shi-shan, June, 1909, collected by *Katsumata*, *Hongkong Herb.*, 6643.

Nearest to the Burmese *L. Kurzii*, Hook. f., from which it is distinguishable by its nearly glabrous leaves.

Ardisia pachyphylla, *Dunn*, sp. nov. *Arbor* omnino glabra. *Folia* oblanceolata, apice acuta, basi in petiolum attenuata, 8–9 cm. longa, coriacea, venis obscuris ; petioli 0·8–1·2 cm. longi. *Flores* umbellati vel breviter racemosi in ramis inflorescentiae compactae terminalis 12 cm. latae ; pedicelli 6–8 mm. longi. *Calyx* 5-fidus, 1–1·5 mm. longus, lobis ovatis glandulosis. *Corolla* eglandulosa, rotata, 0·9–1·0 cm. lata, fere ad faucem 5-fida, lobis ovatis aestivatione contortis. *Stamina* fauce inserta, antheris 3 mm. longis apiculatis filamento 6-plo longioribus. *Ovarium* globosum, stylo ante anthesin incluso, ovulis paucis biseriatis.

Ng-shi-shan, June, 1909, collected by *Katsumata*, *Hongkong Herb.*, 6680.

Allied to the North Indian *A. neriifolia*, Wall., but distinguished by its umbellate or nearly umbellate flowers.

Ervatamia pallida, Pierre ex Spire, Le Caoutchouc, 141.

The Hainan form has a glandular corolla and less caudate leaves. The species is rather widely dispersed in and about the same latitude in French Cochin China. It is said to yield a good caoutchouc (*Spire*, l.c. 180).

Callicarpa brevipes, Hance in Ann. Sci. Nat. sér. 5, v. 233.

Ng-shi-shan, June, 1909, collected by *Katsumata*.

Only known previously from the neighbourhood of Swatow and Hongkong, on the coast of Kwangtung.

L.—MISCELLANEOUS NOTES.

Mr. I. H. Burkill, M.A., Reporter on Economic Products to the Government of India, and Curator of the Industrial Section of the India Museum, Calcutta (*K. B.* 1899, p. 50 ; 1900, p. 16), has been appointed by the Secretary of State for the Colonies Director of the Botanic Gardens, Singapore, in succession to Mr. H. N. Ridley, M.A., C.M.G., F.R.S., retired.

Mr. George Henry Eady and Mr. Ernest William Morse, formerly members of the gardening staff of the Royal Botanic Gardens, have been appointed by the Secretary of State for the Colonies, on the recommendation of Kew, Curators in the Agricultural Department of the Gold Coast.

Mordecai Cubitt Cooke.—We record with regret the death of Mr. M. C. Cooke, for twelve years in charge of the Cryptogamic department of the Herbarium of the Royal Botanic Gardens. Cooke was born at Horning, in Norfolk. At the age of nine, he went to reside with an uncle at Ilford, and commenced the study of botany, being, as a child, first interested in flowering plants. His attention was soon attracted to fungi, at first from an edible standpoint, but soon, as Cooke himself often stated, the fungi exercised such a spell over his entire existence, that his interest in these plants ceased only when he peacefully passed away at his residence in Kentish Town on August 19th, a few days after his 87th birthday. Being dependent on his own resources from an early age, Cooke was, in turn, an assistant in a drapery establishment, teacher in a National school, and a lawyer's clerk. He afterwards obtained a more congenial appointment as assistant in the India Museum. On the abolition of this institution, Cooke spent some time at the South Kensington Museum, in the Mycological Department, and afterwards came to the Herbarium at the Royal Botanic Gardens, Kew, where he was also placed in charge of the mycological section. Cooke remained at Kew from 1880 to 1892, when he retired on pension. During this time Cooke incorporated his own herbarium, containing 46,000 specimens, with the existing collection at Kew as well as the collection of fungi presented to Kew by the Rev. M. J. Berkeley. Cooke's figures of fungi, mostly coloured, and numbering 25,000 plates, are also at Kew.

His first important work was the "Handbook of British Fungi," in two volumes, published in 1871, followed by "Mycographia," or coloured figures of fungi from all parts of the world, 113 plates; "Handbook of Australian Fungi," and "Illustrations of British Fungi," 1200 coloured plates. In addition to the above, over 300 articles on mycological subjects are credited to Cooke by Lindau and Sydow; for a period af 15 years he also edited "Grevillea," a journal devoted to cryptogamic botany.

A pronounced feature of Cooke was his willingness to assist anyone interested in mycology; personally I may say that during an intimate acquaintance for over 30 years, I invariably received the fullest information on any subject that he was capable of affording, and cannot sufficiently express my indebtedness; this statement will, I am sure, be endorsed by many mycologists in various parts of the world.

G. M.

Botanical Magazine for October.—The plants figured are *Chamaedorea glaucifolia*, H. Wendl. (t. 8457); *Ceropegia Thorncroftii*, N. E. Brown (t. 8458); *Osmanthus Delavayi*, Franch. (t. 8459); *Elsholtzia Stauntoni*, Benth. (t. 8460); and *Furcrea elegans*, Tod. (t. 8461).

The *Chamaedorea* is an elegant species which has been in cultivation at Kew in the Aroid House for some 40 years. Last year flowers of both sexes were produced and yielded materials for the

illustration. *C. glaucifolia* has a slender stem with a graceful head of foliage. Its exact habitat is somewhat uncertain but it is probably in Guatemala. It was first described by Wendland in 1854 from a solitary plant in the Brussels Botanic Garden.

Ceropegia Thorncroftii was discovered near Barberton in the Transvaal by Mr. G. Thorncroft, by whom also it was introduced to European collections. From plants sent by him to the Cambridge Botanic Garden the material for the illustration was furnished in August, 1911. Its nearest ally is *C. crispata*, from which it differs in the much smaller flowers and the gibbous projection at the middle of the keel on the inner side of the lobes.

The late Abbé Delavay discovered the *Osmanthus*, which forms the subject of the next plate, in the mountains of Lankong in Yunnan, at about 9500 feet. The seed was originally sent to Mr. M. L. de Vilmorin. The plant figured, which was purchased from Messrs. Lemoine and flowered in March of this year, is one of the most pleasing of new evergreen shrubs. It resembles *O. suavis*, King, from Sikkim and Manipur, which, however, may be distinguished by its larger, more acute leaves, and its somewhat smaller lateral as well as terminal flowers.

Elsholtzia Stauntoni is probably the most useful of the 36 known species from the horticultural point of view. This species appears to be limited to the Province of Chihli, North China, and was introduced to cultivation by Mr. J. G. Jack, of the Arnold Arboretum. We are indebted to Prof. Sargent for the plant, presented to Kew in 1910, which has furnished material for the preparation of the plate.

To Lady Hanbury's garden at La Mortola, Ventimiglia, we are again indebted for material of the fine *Furcraea*, which, though long cultivated at Kew, has not yet flowered in the Succulent House. The plant is a native of Mexico and is allied both to *F. flavoviridis*, Hook., figured at t. 5163 of the Botanical Magazine and to *F. undulata*, Jacobi, also figured in the Magazine at t. 6160. The plant was first described by Todaro from a plant which flowered in the Palermo Botanic Garden in 1875, and is distinguished from all the other more or less stemless forms by the leaves which are nearly eight feet long.

Protium australasicum.—This tree was described in 1892 by Mr. F. M. Bailey, Colonial Botanist, Queensland, under the name *Bursera australasica* (Queensl. Dept. Agric., Bull. No. 18, p. 8), and the description was reproduced in his Queensland Flora, p. 223 (1899). Additional particulars regarding the flowers were given by Mr. Bailey in Proc. Roy. Soc. Queensl., vol. xi., p. 14 (1895). According to the classification of the Genera Plantarum, which was followed in the Queensland Flora, *B. australasica* comes under the genus *Bursera*.

In Engler's monograph of the *Burseraceae* (DC. Monogr. Phan. vol. iv., 1883, pp. 1–169), however, this genus was divided into *Bursera* (proper) and *Protium*, Burm.; and the segregation of these two genera has been accepted by botanists generally.

Using the key to the genera of *Burseraceae* given by Engler in Engl. and Prantl, Nat. Pflanz., vol. iii. 4, p. 234, *Bursera australasica* comes under division A.a. Petals valvate ; drupe indehiscent. The next subdivision is as follows :—

a. Drupe with 5–1 separate or contiguous but not united pyrenes.

β. Drupe with a 3–1-celled endocarp.

Now, *B. australasica* has a 4-ribbed endocarp composed of four extremely hard pyrenes which are united by rather softer tissue so that they may be forced asunder by a knife. It is, therefore, a little doubtful in which subdivision it should come. The only genera, however, with which its floral characters are consistent, are *Protium* in subdivision *a*, and *Canarium* in subdivision *β*. According to Engler, l.c. 234, 239, *Canarium* has vascular bundles in the pith, and as these are not present in *Bursera australasica*, this species is now transferred to the genus *Protium* as *P. australasicum*, Sprague (comb. nov.).

T. A. S.

Presentations to Museums.—The following miscellaneous specimens have been received in addition to those previously recorded in the Bulletin :—

Major Cyprian Bridge, Kingston-on-Thames.—Malformed branch of Douglas Fir from East Kootenay, British Columbia.

The Venble. H. H. Douglas Hamilton, Newmarket.—Fruit of Colocynth (*Citrullus Colocynthis*) from a tomb at Thebes.

Mr. M. D. Reece, Gold Coast.—Fasciated branch of Para Rubber Tree (*Hevea brasiliensis*).

Mr. W. Lock, Upwell, Norfolk.—Specimens of Tobacco grown in Norfolk.

Mr. J. D. Watson, M.I.C.E., Tyburn, Birmingham.—Two photographs of Bacteria beds at Minworth.

Mr. J. Medley Wood, Durban, Natal.—Section of wood of *Chrysophyllum viridifolium*.

Mr. H. A. Tempany, B.Sc., Antigua.—Specimens of Cotton Stainers and sample of Seed Cotton.

Mr. J. R. Drummond, Kew Gardens.—Specimens of wood and bark of *Boswellia serrata*.

Mr. R. B. Rogers, Launceston, Cornwall.—Photographs of *Cupressus Lawsoniana* injured by squirrels and rabbits.

Director of Agriculture, Southern Nigeria.—Fruits of *Thaumatococcus Daniellii*.

Japanese Horticultural Society of Tokyo.—Graphic of Statistics showing Japanese Horticultural Produce.

Marquess of Bute, Cardiff Castle, Glamorganshire.—Fourteen photographs illustrative of Forestry on the Estate.

Messrs. Thomas Wright & Son, Steam Mills, Chesham. A collection of various articles made from home-grown and foreign woods.

Messrs. Gale & Polden, Amen Corner, London, E.C.—Series of Photographs taken in the Royal Botanic Gardens, Kew.

Mr. J. M. Whistler, Upper Blackwood, Western Australia.—Photographs of Grass-gum trees (*Xanthorrhoea* spp.).

Messrs. A. & G. Paterson, Ltd., Banchory.—Planks of Douglas Fir, Larch, and *Abies nobilis*.

Mr. F. Du Cane Godman, London, S.W.—Section of wood of the old tree of *Dracaena Draco* of Teneriffe.

Rev. Canon Ellacombe, Bitton Vicarage, Bristol.—A collection of photographs of trees, &c.

Earl of Yarborough, Brocklesby Park, Lincolnshire.—Fifteen sections of burrs from home-grown trees.

Lt.-Col. J. J. Wood, Richmond, Surrey.—Painting of Flamboyant (*Poinciana regia*).

Mrs. Ward, Cambridge.—Portrait of the late Prof. Harry Marshall Ward, F.R.S.

Mr. H. J. Elwes, F.R.S., Colesborne, Gloucestershire.—Sections of Tree Fern stems, wood of *Diospyros Melanoxylon*, and basket made of leaves of *Alpinia nutans* by the Aborigines, Formosa.

Miss Wright, Kayhough, Kew Gardens.—Wood and herbarium specimen of *Ailanthus glandulosa*.

Messrs. W. T. Ellmore & Son, Ltd., London, E.C.—Examples of Willow basket-work.

Lt.-Col. Ratton, Blackheath.—A collection of drawings of fruit and fruit trees of the Malay States made by the late Surgeon-Major Ratton of the Madras Army. The drawings include Durian (*Durio Zibethinus*), Betel Nut (*Areca Catechu*), Jack Fruit (*Artocarpus integrifolia*), Bread Fruit (*Artocarpus incisa*).

J. M. H.

Forest Economic Products of India.*—This book, the outcome of a recommendation by the Committee of the Franco-British Exhibition of 1908, gives information regarding the various forest products of India. It is not a complete guide to all such products, but only to the more valuable and important.

After outlining the distribution and classification of the forest types the author discusses in detail eighty of the more common timber trees, giving the distribution, quality and uses of timber, value, and yield in various localities. Thereafter minor products such as cutch, gums, resins, fibres, &c., are dealt with.

For those interested commercially in the forest products of India this information should prove useful and for the convenience of those who may wish further information there are supplied the official designation and address of the officer to whom inquiries regarding each particular product should be directed.

A few reproductions of photographs of the commoner species and a map showing the general distribution of forests are added.

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* Commercial Guide to the Forest Economic Products of India, by R. S. Pearson, F.L.S., Economist at the Forest Research Institute, Dehra Dun.